

RHIANNON MACOM and JOSEPH HORZEMPA, Department of Natural Sciences and Mathematics, West Liberty University, WV. The Role of FTL_1228 in Erythrocyte Invasion by *Francisella tularensis*.

Francisella tularensis is a gram-negative bacterium and is the causative agent of tularemia – a disease commonly referred to as ‘rabbit fever’. This microbe is extremely virulent as inhalation of fewer than ten bacteria can lead to a lethal infection. During infection, *F. tularensis* replicates in cells of the immune system, such as macrophages, as well as other non-phagocytes such as epithelial cells and hepatocytes. Moreover, this bacterium has been shown to invade erythrocytes – a process that enhances colonization of ticks (a major disease vector). Our laboratory previously showed that a locus encoding a hypothetical gene, FTL_1228, was induced in the presence of erythrocytes. Therefore, we hypothesized that this gene may be responsible for invasion of these host cells. In this study, we mutated FTL_1228 of *F. tularensis* LVS. Studies are ongoing to determine the role of this gene in erythrocyte invasion. Preliminary data shows that a strain containing a disruption mutation of FTL_1228 invades erythrocytes at a higher rate than the wild-type *F. tularensis* LVS. This may suggest that FTL_1228 suppresses red blood cell invasion. **(Supported by NIH Grant P20GM103434 to the West Virginia IDeA Network for Biomedical Research Excellence).**